

ABSTRACT OF THE DISCLOSURE

5       A bi-directional stepping motor in which a rotor is rotatable in steps of 180 degrees  
each, the stepping motor comprising a rotor comprising a permanent magnet and rotatably  
mounted about an axis and providing a permanent magnetic field; a first electrical coil and  
a second electrical coil; a stator on which the first electrical coil is mounted; and a control  
circuit, coupled to the first and second electrical coils, for applying electrical pulses  
independently to each coil and for controlling the polarity thereof, the coils producing  
10       magnetic fields in response to the pulses and wherein the rotor is rotatable in response to  
the magnetic fields; wherein each step of 180 degrees is effectuated by providing to the  
first coil, a first pulse of a first polarity and a second pulse of a second polarity; and to said  
second coil, a pulse of the second polarity simultaneously with the providing of the second  
pulse to the first coil; wherein during the providing of the first pulse to the first coil, there  
15       is no pulse being provided to the second coil.